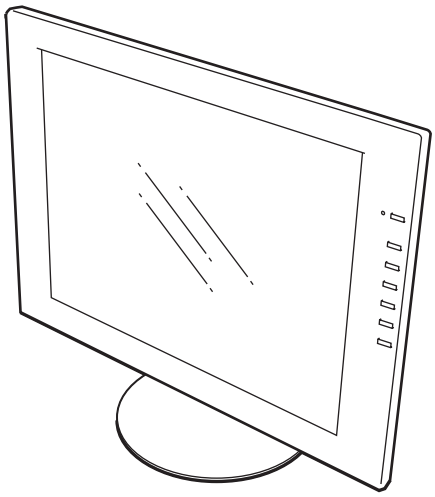
SDM-S91

SERVICE MANUAL

US Model
Canadian Model
AEP Model



SPECIFICATIONS

LCD panel	Panel type: a-Si TFT Active Matrix Picture size: 19.0 inch
Input signal format	RGB operating frequency* Horizontal: 28 – 92 kHz Vertical: 48 – 85 Hz
Resolution	Horizontal: Max.1280 dots Vertical: Max.1024 lines
Input signal levels	RGB video signal 0.7 Vp-p, 75 Ω, positive SYNC signal TTL level, 2.2 kΩ, positive or negative (Separate horizontal and vertical, or composite sync) 0.3 Vp-p, 75Ω, negative (Sync on green)
Power requirements	100 – 240 V, 50 – 60 Hz, Max. 1.5 A
DC input	DC 12 V (supplied AC adapter)
Power consumption	Max. 50 W
Operating temperature	5 – 35 °C
Dimensions (width/height/depth)	
	Display (upright): Approx. 458 × 421 × 235 mm (18 × 16 1/2 × 9 1/4 inches) (with stand) Approx. 458 × 370 × 64 mm (18 × 14 1/2 × 2 1/2 inches) (without stand)
Mass	Approx. 7.3 kg (16 lb 2 oz) (with stand) Approx. 5.6 kg (12 lb 6 oz) (without stand)
Plug & Play	DDC2B

* Recommended horizontal and vertical timing condition
- Horizontal sync width duty should be more than 4.8% of total horizontal time or 0.8 µs, whichever is larger.
- Horizontal blanking width should be more than 2.5 µsec.
- Vertical blanking width should be more than 450 µsec.

Design and specifications are subject to change without notice.

TFT LCD Color Computer DISPLAY

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described right.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

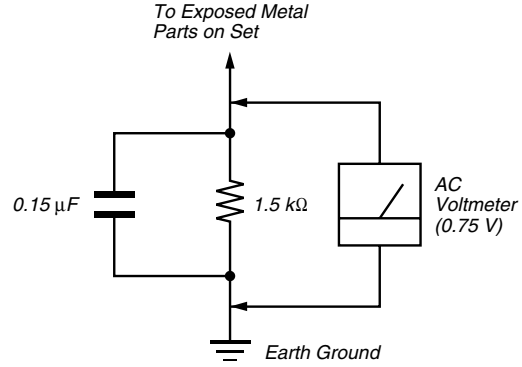


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SONT CRITIQUES POUR LA SÉCURITÉ. NE LES REMPLACER QUE PAR UNE PIÈCE PORTANT LE NUMÉRO SPECIFIÉ. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

POWER SAVING FUNCTION

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption as shown below.

Power mode	Power consumption	⏻ (power) indicator
normal operation	50 W (max.)	green
active off* (deep sleep)**	3 W (max.)	orange***
power off	3 W (max.)	off

* When your computer enters the “active off” mode, the input signal is cut and NO INPUT SIGNAL appears on the screen. After 20 seconds, the monitor enters the power saving mode.

** “deep sleep” is the power saving mode defined by the Environmental Protection Agency.

*** If only the horizontal or vertical sync signal is input to the monitor, the power indicator may alternately flash green and orange.

AUTOMATIC PICTURE QUALITY ADJUSTMENT FUNCTION

When the monitor receives an input signal, it automatically matches the signal to one of the factory preset modes stored in the monitor's memory to provide a high quality picture at the center of the screen. (See Appendix for a list of the factory preset modes.)
For input signals that do not match one of the factory preset modes, the automatic picture quality adjustment function of this monitor automatically adjusts the picture position, phase, and pitch, and ensures that a clear picture appears on the screen for any timing within the monitor's frequency range (horizontal: 28 – 92 kHz, vertical: 48 – 85 Hz).

Consequently, the first time the monitor receives input signals that do not match one of the factory preset modes, the monitor may take a longer time than normal for displaying the picture on the screen. This adjustment data is automatically stored in memory so that next time, the monitor will function in the same way as when the monitor receives the signals that match one of the factory preset modes.
In all modes as above, if the picture is adjusted, the adjustment data is stored as a user mode and automatically recalled whenever the same input signal is received.

Note

While the automatic picture quality adjustment function is activated, only the ⏻ (power) switch will operate.

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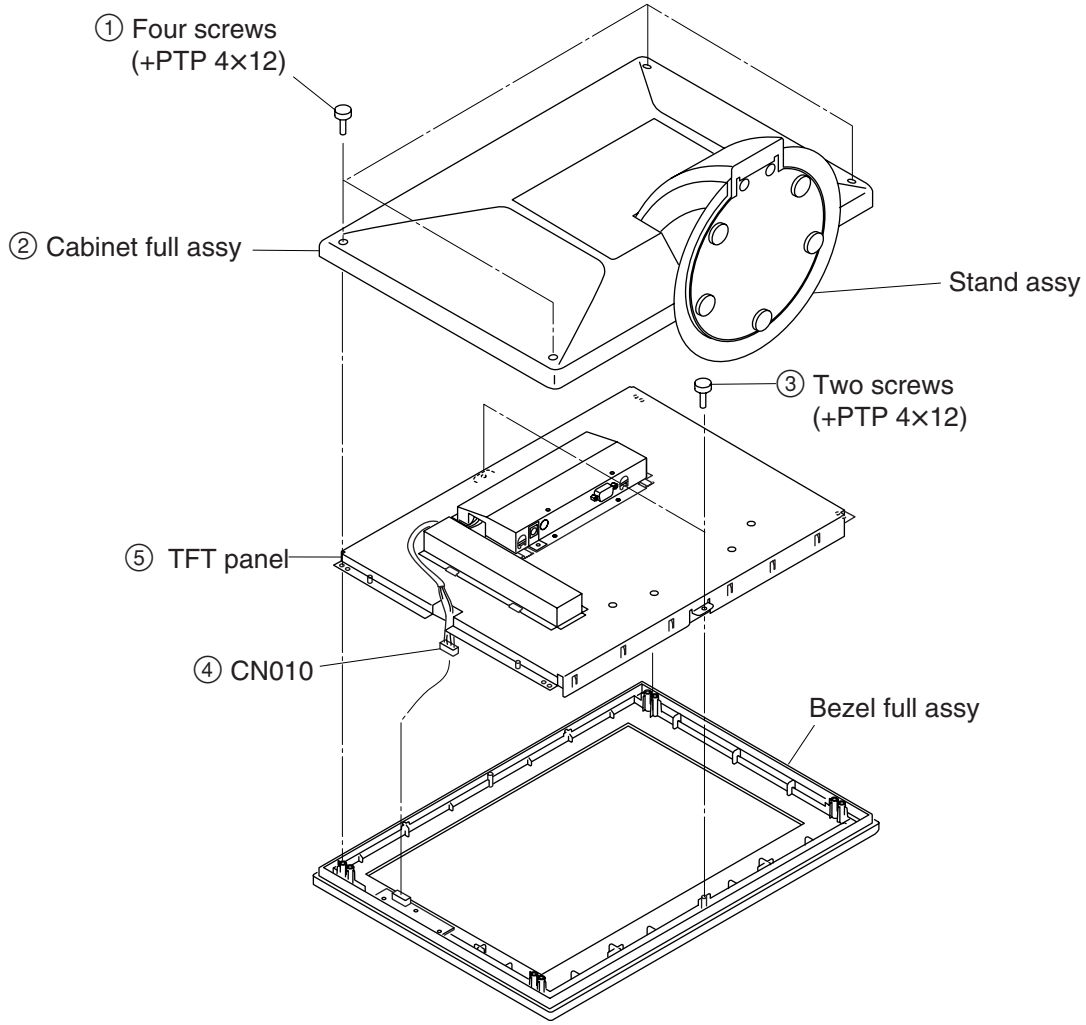
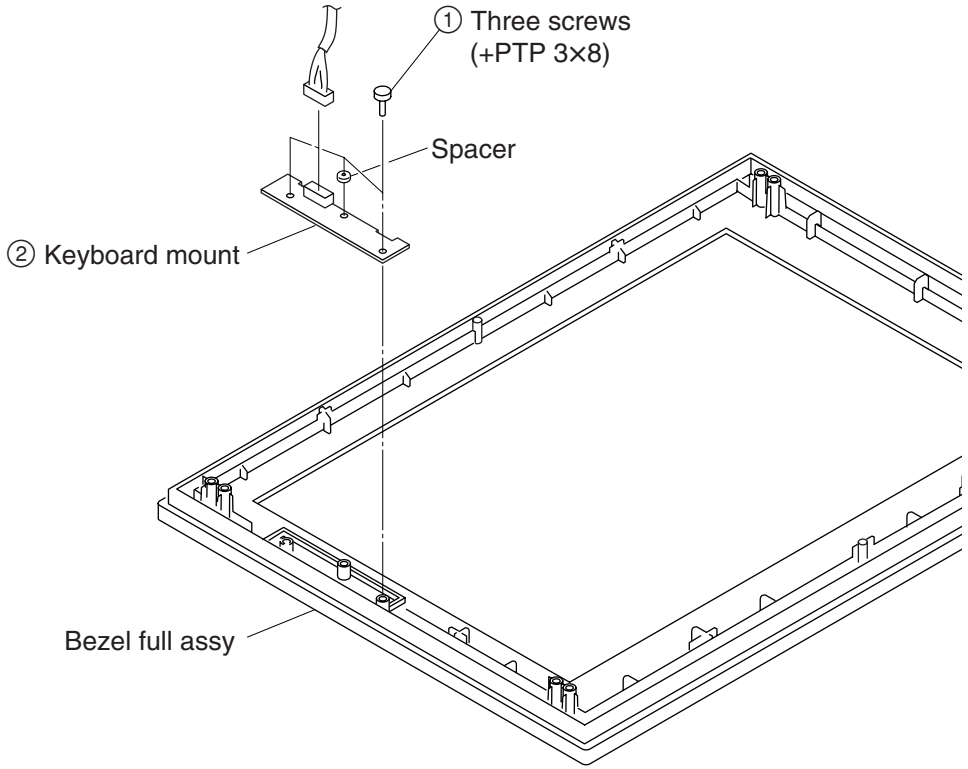
SECTION 1
DISASSEMBLY

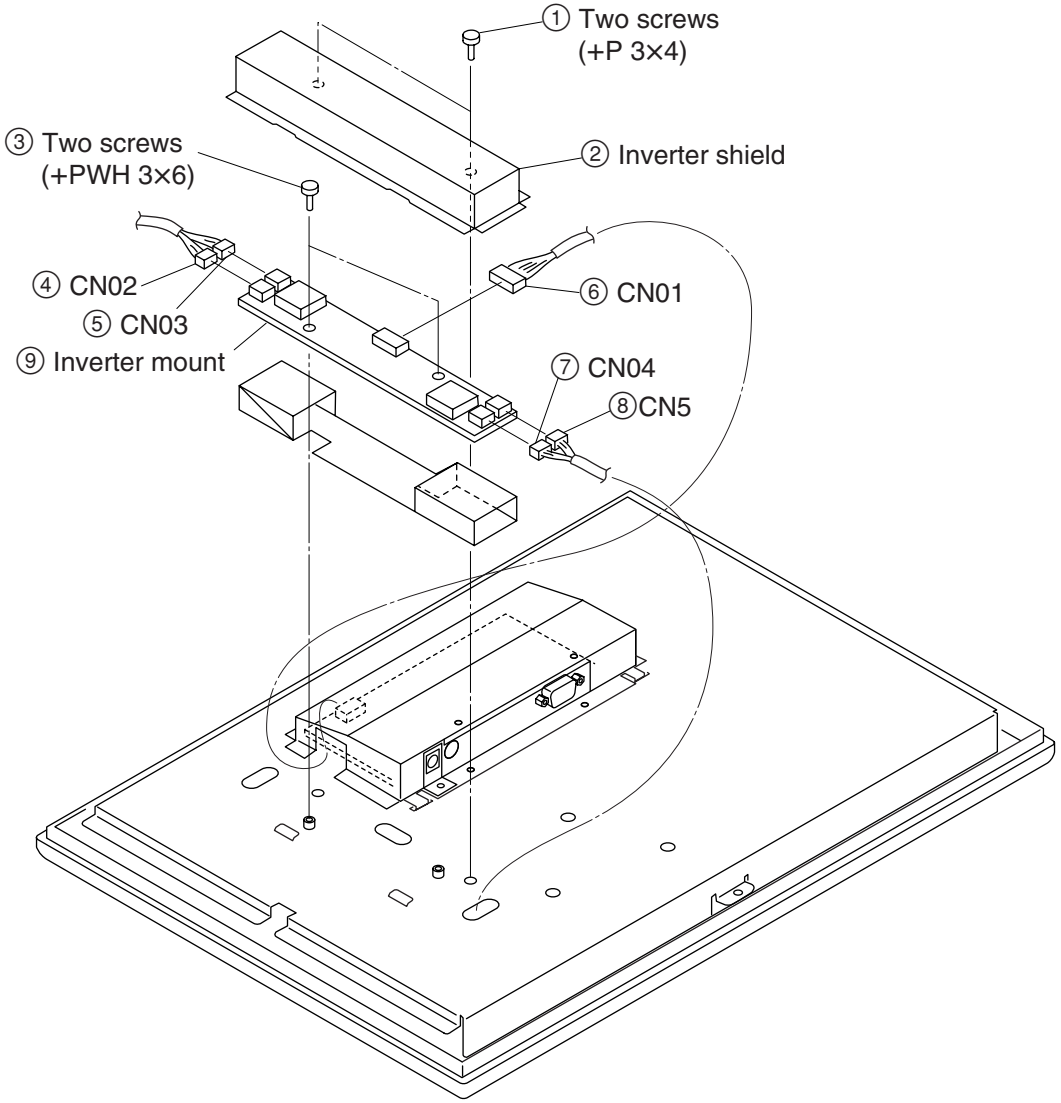
1-1. CABINET FULL ASSY AND TFT PANEL REMOVAL



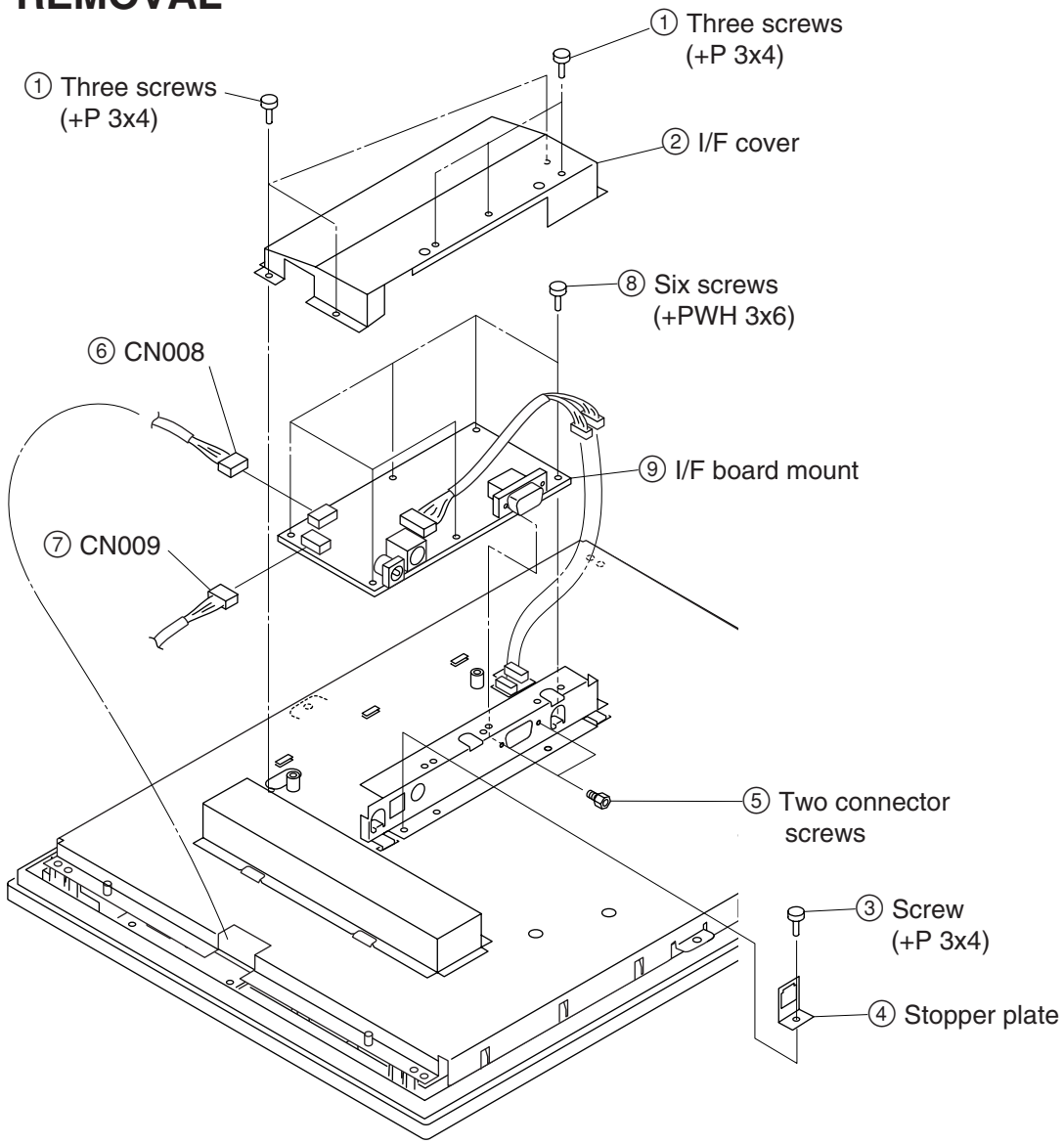
1-2. KEYBOARD MOUNT REMOVAL



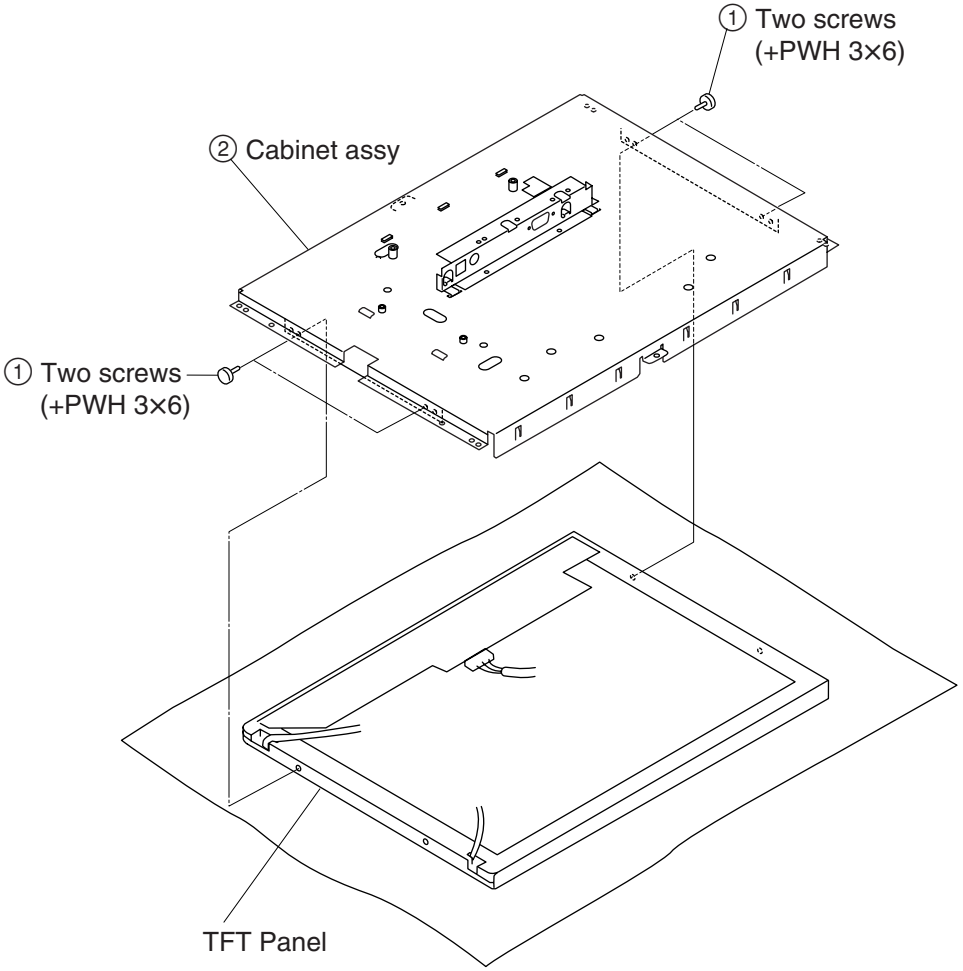
1-3. INVERTER MOUNT REMOVAL



1-4. I/F BOARD MOUNT REMOVAL

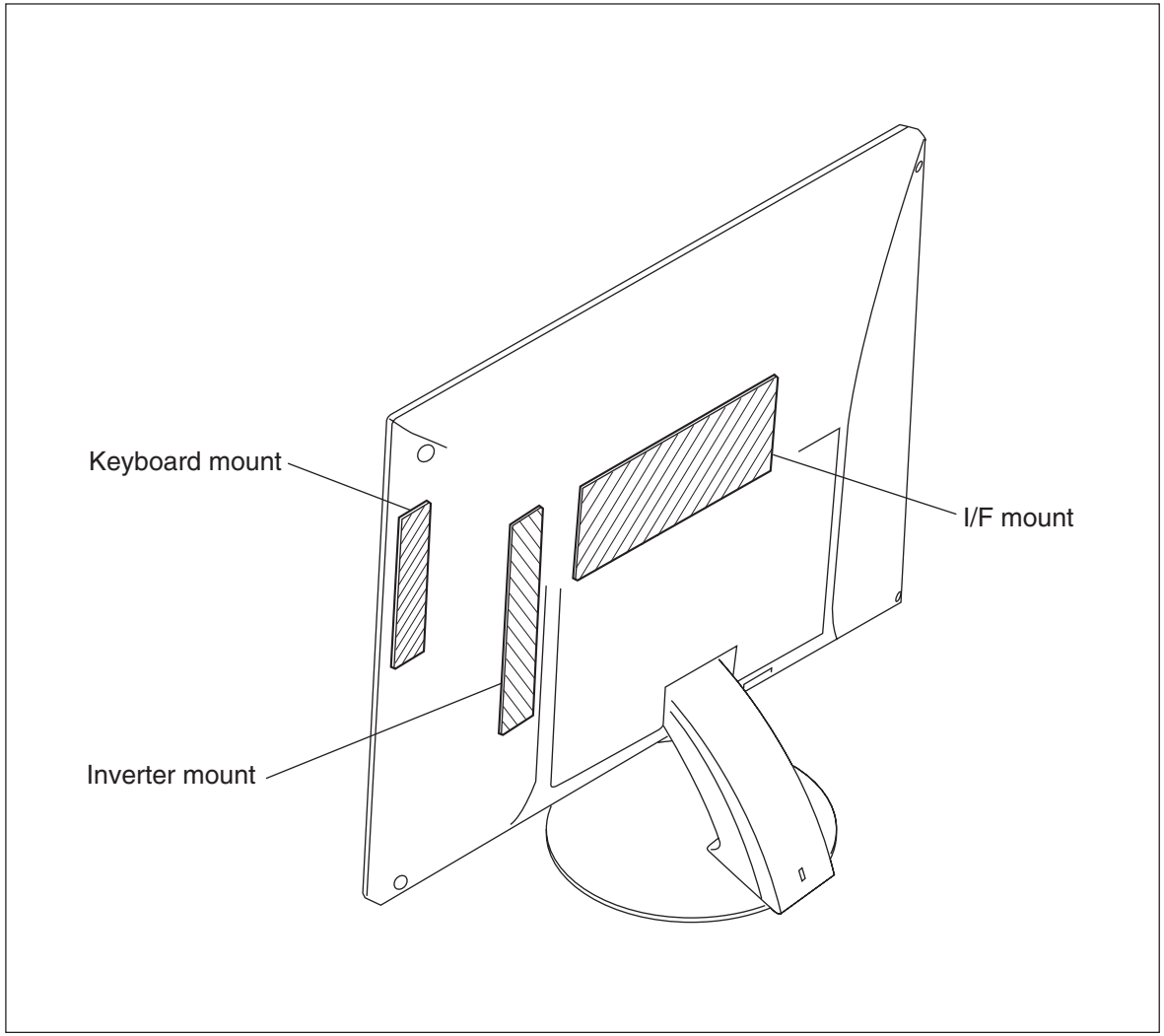


1-5. TFT PANEL REMOVAL



SECTION 2
DIAGRAM

2-1. CIRCUIT BOARDS LOCATION



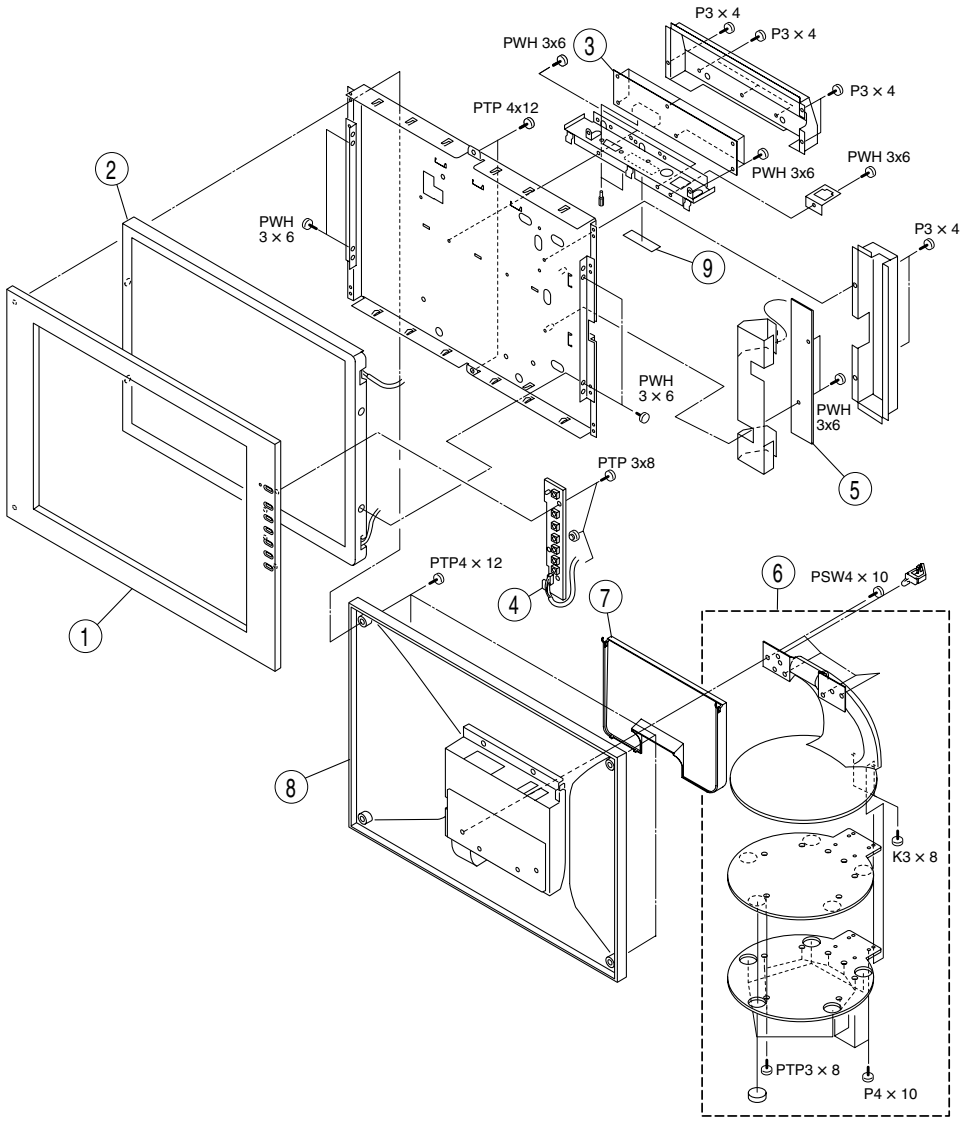
SECTION 3
EXPLODED VIEWS

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

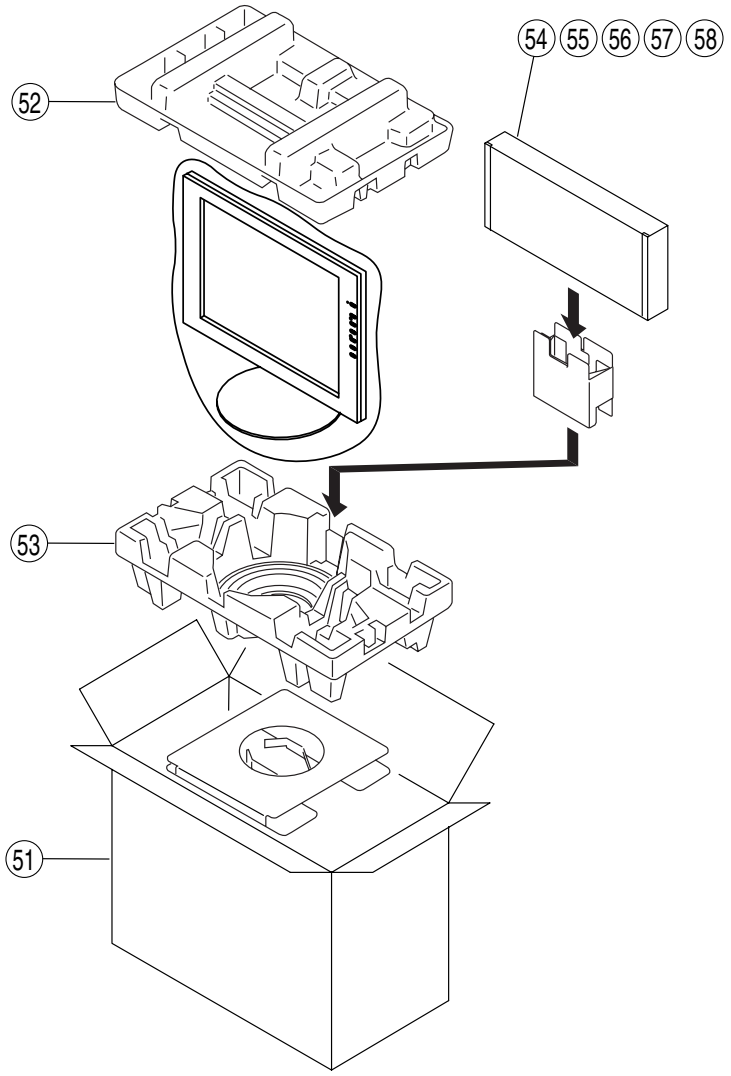
Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

3-1. CHASSIS



REF.NO.		PART NO.	DESCRIPTION	REMARK
1		X-4041-076-1	ASSY, BEZEL FULL (U/C)	
		X-4041-309-1	ASSY, BEZEL FULL (AEP)	
2		1-805-139-11	LCD PANEL (LTM190E1-L04)	
3		1-761-654-11	I/F BOARD MOUNT	
4		1-761-652-11	KEYBOARD MOUNT	
5		1-761-653-11	INVERTER MOUNT	
6		X-4041-089-1	STAND ASSY (U/C)	
		X-4041-308-1	STAND ASSY (AEP)	
7		4-092-085-01	COVER, REAR (U/C)	
		4-093-516-01	COVER, REAR (AEP)	
8		X-4041-119-1	ASSY, CABINET FULL (U/C)	
		X-4041-306-1	ASSY, CABINET FULL (AEP)	
9	*	4-092-089-01	LABEL, INFORMATION (U/C)	
	*	4-092-089-11	LABEL, INFORMATION (AEP)	

3-2. PACKING MATERIALS



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	* 4-092-108-01	INDIVIDUAL CARTON (U/C)	
	* 4-092-719-01	INDIVIDUAL CARTON (AEP)	
52	* 4-092-106-01	CUSHION (UPPER)	
53	* 4-092-107-01	CUSHION (LOWER)	
54	1-477-232-13	ADAPTOR AC (U/C)	
	1-477-232-14	ADAPTOR AC (AEP)	
55	1-765-718-11	CORD SET, POWER (U/C)	
56	1-824-308-11	CABLE, SIGNAL (HD15-HD15)	
57	4-092-714-01	DISC, INFORMATION(CD-ROM) (U/C)	
58	4-087-260-32	MANUAL, INSTRUCTION	

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